

**NAVIGAT X MK 2**  
**Digital Gyrocompass System**



# NAVIGAT X MK 2 Digital Gyrocompass System

## Overview

Sperry Marine is pleased to announce the introduction of its new-generation NAVIGAT X MK 2 digital gyrocompass system, which provides a cost-effective solution that satisfies international carriage requirements for a type-approved marine gyrocompass.

The NAVIGAT X MK 2 gyrocompass is a compact, one-unit design that runs on a 24-volt power supply with two independent DC inputs. It can drive up to four analogue repeaters and provides five additional serial data outputs and one six-steps/degree output. Based on the proven Sperry Marine NAVIGAT X MK 1 design, the new gyrocompass provides better than 40,000 hours mean time between failures. The system remains north-stabilized for up to three minutes in the event of a power interruption. The NAVIGAT X MK 2 complies with International Maritime Organization (IMO) regulations A.424(XI) and A.694(17) as well as the International Standards Organization (ISO) standard 8728, and is fully Wheelmark type-approved. The introduction of this new gyrocompass completes the Sperry Marine range of heading sensors, which now comprises the NAVIGAT 2100 fiber-optic gyrocompass, the NAVIGAT X MK 1 and the NAVIGAT X MK 2 digital gyrocompasses and the NAVISTAR satellite compass.

## Main Features

- Performance in accordance with IMO A.424(XI), A.694(17), and ISO 8728.
- MED (Wheelmark) approval.
- Comprises one single unit.
- Power supply: two independent 24 VDC inputs.
- Control and display unit (not removable) in front cover with 4-digit heading display and 6 operating keys.
- Heading accuracy
  - Static <math>< 0.1^\circ</math> secant latitude
  - Dynamic <math>< 0.4^\circ</math> secant latitude
  - Settle point error <math>< 0.1^\circ</math> secant latitude
- Automatic static north speed error correction – no extra unit required.
- Rate-of-turn output.
- High speed transmission and follow-up system 100°/sec.
- Highly accurate heading data transmission by means of shaft encoder.
- Self-aligning repeater compasses with serial interface IEC-61162-1 / RS 422.
- Gyro system remains north-stabilized during power interruptions of up to three minutes.
- Twin rotors (19,000 rev./min.) and liquid damping system eliminate latitude error.
- $\pm 180^\circ$  electronic alignment error correction in setup program (mechanical correction is not necessary).

## Standard Version



### Inputs

- Position:**  
1 input IEC 61162-1
- Speed:**  
1 input IEC 61162-1 or 200 pulses/nm
- Heading from electronic compass:**  
1 input IEC 61162-1
- Steering mode status:**  
1 input Man/Auto from selector
- External heading source status:**  
1 input Gyro/Mag from selector
- Alarm mute:**  
1 input from external control

### Power

- Main power supply:**  
18 VDC - 36 VDC
- Backup power supply:**  
18 VDC - 36 VDC

### Optional



Remote Control and Display Unit  
\* when available

### Outputs

- 4 outputs NMEA TTL:**  
gyrocompass heading, magnetic compass heading\*, rate of turn, heading reference status to compass repeaters.
- 1 output Sensor Data 1 RS 422:**  
gyrocompass heading, magnetic compass heading\*, rate of turn, heading reference status, position\*, speed\*.
- 1 output Sensor Data 2 RS 422:**  
gyrocompass heading, magnetic compass heading\*, rate of turn, heading reference status;  
**or**  
NAVIPRINT Voyage Data Printer: graphic printout of heading over time and status information.
- 1 output IEC 61162-1 Fast:**  
gyrocompass heading, magnetic compass heading\*, rate of turn, heading reference status.
- 1 output RS 422 Superfast IEC 61162-1 or IEC 61162-2 selectable:**  
gyrocompass heading, magnetic compass heading\*, rate of turn, heading reference status.
- 1 output Furuno AD10:**  
gyrocompass heading.
- 1 output 6 steps/°:**  
heading. Internal supply 24 VDC, max. 18 W.
- 1 output rate of turn:**  
selectable output of  $\pm 30$ ,  $\pm 90$  and  $\pm 300^\circ$ /min. or customized from  $\pm 0.1$  to  $999.9$  mV/°/min. ( $\pm 10$  V, 10 mA max.).
- 1 alarm signal each for:**  
heading difference (1 relay)  
power failure and general device error (1 relay).

- High MTBF (40,000 hours).
- 18-month maintenance intervals.
- Monitoring and alarm functions for all voltages, gyroscope current and follow-up system.
- Short maintenance and repair times – low service costs.
- Permanent storage of operational data (gyrosphere current, temperature, elapsed operation time).
- Over 250 Sperry Marine service locations worldwide.

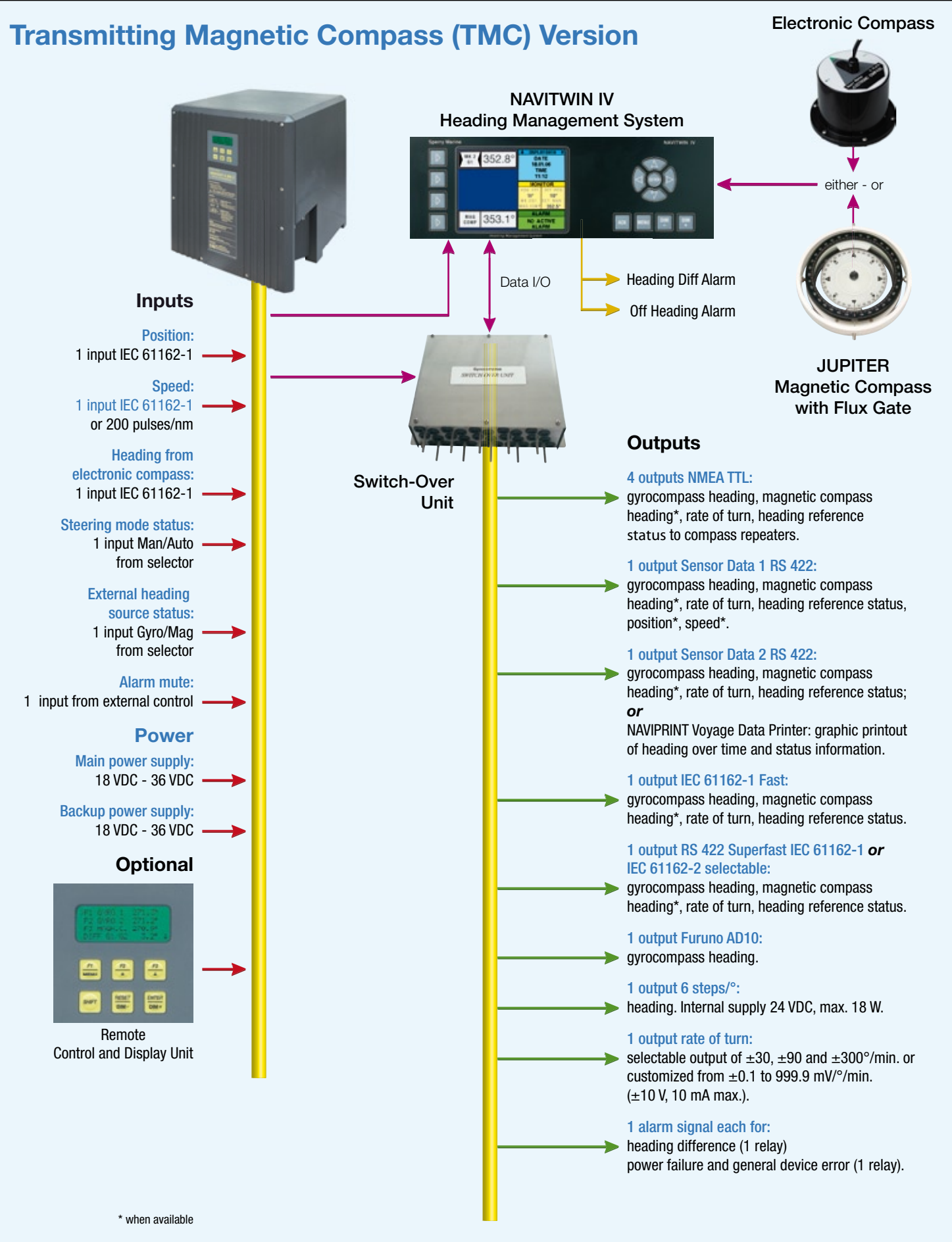
### Power Consumption

Start-up	DC 80 W
Operation	DC 45 W
Each repeater (analogue)	8 W

### Dimensions and Weight

Width	404 mm
Height	520 mm
Depth	420 mm
Weight	21 kg

# Transmitting Magnetic Compass (TMC) Version



\* when available

**Accessory Equipment**



**Bearing repeater compass  
with 360° card in a stand  
with azimuth device PV 23  
Total weight: 16.1 kg**



**Universal Digital Repeater  
Weight: 1.0 kg with cable**

**Sperry Marine**

[www.sperrymarine.northropgrumman.com](http://www.sperrymarine.northropgrumman.com)

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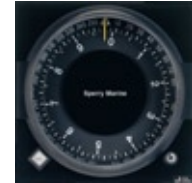
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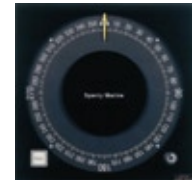
Fax: +44(0)-20 8329-2415



**Bearing repeater compass  
with 360° card in a bulwark console  
Weight: 10.3 kg**



**Steering repeater compass  
for console mounting with 360°  
and 10° compass cards  
Weight: 1.5 kg**



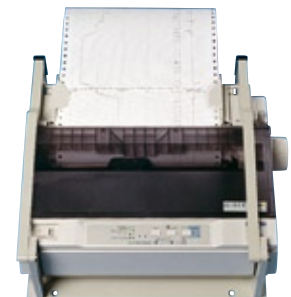
**Console repeater compass  
with 360° card  
Weight: 1.5 kg**



**Prismatic azimuth device PV 23  
Weight: 1 kg**



**Bulkhead repeater compass  
with 360° card  
Weight: 2.9 kg**



**NAVIPRINT  
Navigation Data Printer  
Weight: 8 kg**

Sperry Marine, with worldwide headquarters in Charlottesville, VA, and major engineering and support offices in Melville, NY, New Malden, England, and Hamburg, Germany, is part of the Northrop Grumman **Electronic Systems** sector.

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